

# **Simplicity®**

## **REAR ENGINE RIDERS**

**Simplicity Cavalier, 3100 and REG Series**

**also covers Deutz Allis Sprint, 800 & 1000 Series**

### **5 HP Riders**

1690525 3105, 5 HP Rear Engine Rider

### **8 HP Riders**

1690526 3108, 8 HP Rear Engine Rider

1690527 3108, 8 HP Rear Engine Rider

1691106 3108, 8 HP Rear Engine Rider

1691111 830, 8 HP Rear Engine Rider

1691551 3108, 8 HP Rear Engine Rider

1691552 830, 8 HP Rear Engine Rider

1691631 3108, 8 HP Rear Engine Rider

### **10HP Riders**

1690528 3110, 10 HP Rear Engine Rider

1691108 3110, 10 HP Rear Engine Rider

1691113 1036, 10 HP Rear Engine Rider

1691535 10 REG, 10 HP Rear Engine Rider

1691537 10 REG, 10 HP Rear Engine Rider

1691539 1036, 10 HP Rear Engine Rider

1691618 10 REG, 10 HP Rear Engine Rider

1691635 10 REG, 10 HP Rear Engine Rider

1691995 Sprint 1030, 10 HP Rear Engine Rider

1692011 Sprint 1030M, 10 HP Rear Engine Rider

### **Mower Decks**

1690529 28" Mower Deck

1690530 30" Mower Deck

1690531 36" Mower Deck

1690891 36" Mower Deck

1691147 30" Mower Deck

1691148 36" Mower Deck

1691437 30" Mower Deck

1691438 30" Mower Deck

1691438 30" Mower Deck

1691993 30" Mulcher Mower

1691992 30" Mulcher Mower

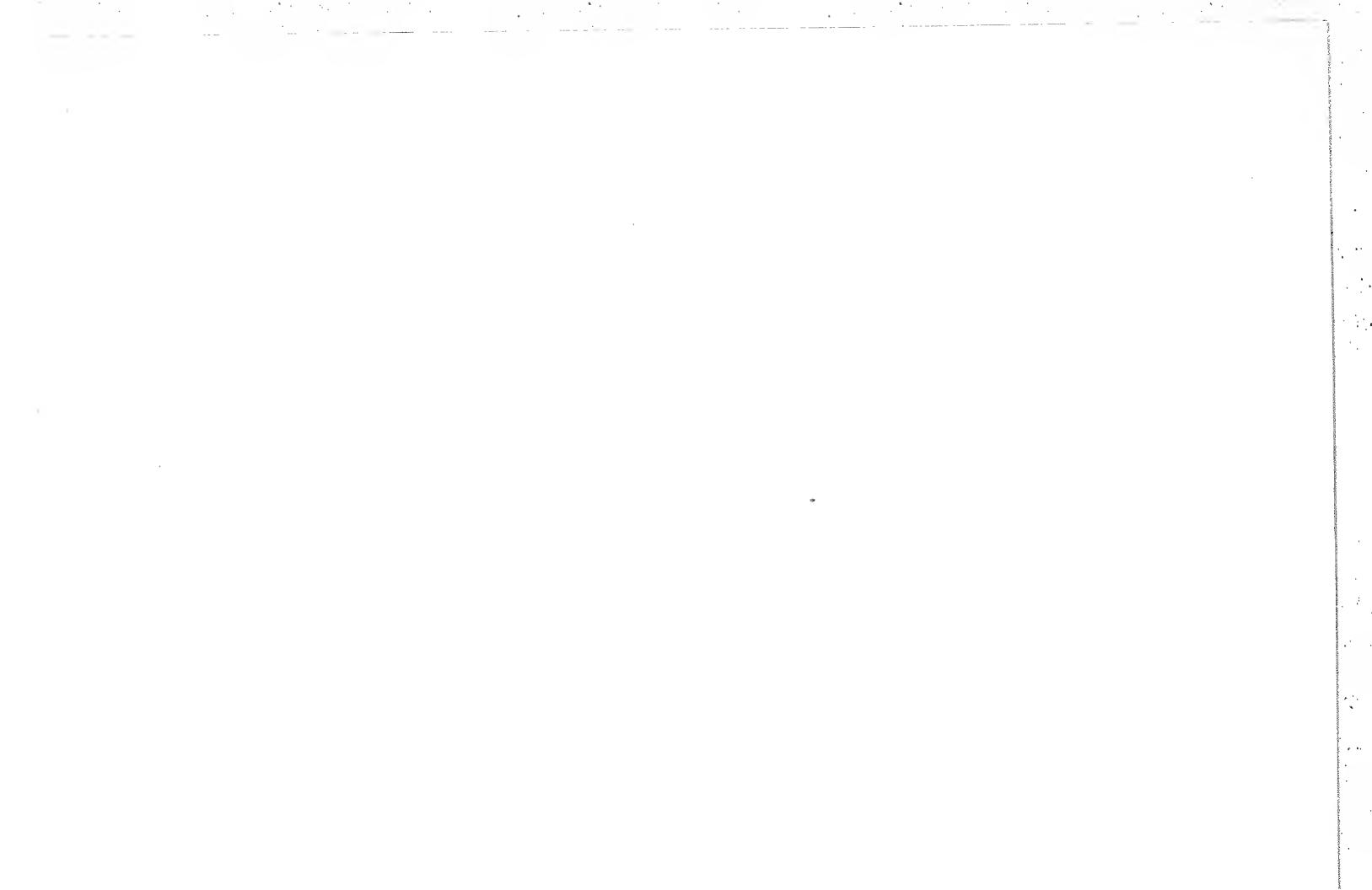


# **OPERATOR'S MANUAL**

1702119

1702120

TP 100-1509-04-C0-SA



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## **Supplement to Operator's Manual**

The following three pages contain important changes on safety rules and instruction decals that have been required by the American National Standards Institute (ANSI), effective January 1, 1992. The new Safety Rules (pages ii & iii) and Instructional Decal (page iv) should be reviewed as an update to information contained in this manual (pages 2-5).

# Safety Rules



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury or death to you, yourself or bystanders, or damage to property or equipment. This cutting machine is capable of amputating hands and feet and throwing objects. The triangle  in text signifies important cautions or warnings which must be followed.

## IMPORTANT - Safe operation practices for riding mowers.

### I. General operation

1. Read, understand, and follow all instructions in the manual and on the machine before starting.
2. Only allow responsible adults, who are familiar with the instructions, to operate the machine.
3. Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blade.
4. Be sure the area is clear of other people before mowing. Stop tractor if anyone enters the area.
5. Never carry passengers.
6. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the mower discharge direction and do not point it at anyone. **Do not operate the mower without either the entire grass catcher or the guard in place.**
8. Slow down before turning.
9. Never leave a running tractor unattended. Always turn off blades, set parking brake, stop engine, and remove keys before dismounting.
10. Turn off blades when not mowing.
11. Stop engine before removing grass catcher or unclogging chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the tractor while under the influence of alcohol or drugs.

14. Watch for traffic when operating near or crossing roadways.
15. Use extra care when loading or unloading the tractor into a trailer or truck.

### II. Slope operation

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

#### DO

- Refer to page 13 for recommendations for wheel weights or counterweights to improve stability.
- Mow up and down slopes, not across.
- Remove obstacles such as rocks, tree limbs, etc.
- Watch for holes, ruts, or bumps. Uneven terrain could overturn the machine. *Tall grass can hide obstacles.*
- Use slow speed. Choose a low gear so that you will not have to stop or shift while on the slope.
- Use extra care with grass catchers or other attachments. These can change the stability of the machine.
- Keep all movement on the slopes *slow and gradual*. Do not make sudden changes in speed or direction.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the blades and proceed slowly *straight* down the slope.

### DO NOT

- *Do not* turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.
- *Do not* mow near drop-offs, ditches, or embankments. The mower could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.
- *Do not* mow on wet grass. Reduced traction could cause sliding.
- *Do not* try to stabilize the machine by putting your foot on the ground.
- *Do not* use grass catcher on steep slopes.

### III. Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of another responsible adult.
2. Be alert and turn machine off if children enter the area.
3. Before and when backing, look behind and *down* for small children.
4. Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.
5. Never allow children to operate the machine.
6. Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

### IV. Service

1. Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.
  - a) Use only an approved container.
  - b) Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke.

- c) Never refuel the machine indoors.
- d) Never store the machine or fuel container inside where there is an open flame, such as in a water heater.

2. Never run a machine inside a closed area.
3. Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
4. Never tamper with safety devices. Check their proper operation regularly.
5. Keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage. Allow machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running.
8. Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
9. Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.
10. Check brake operation frequently. Adjust and service as required.



### WARNING

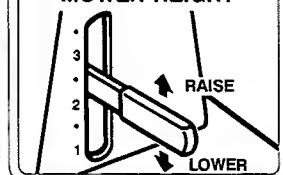
Never operate on slopes greater than 30 percent (16.7) which is a rise of three feet in a travel distance of ten feet. When operating on slopes that are greater than 15 percent (8.5) but less than 30 percent, use front counterweights and rear wheel weights. In addition to front and rear weights, use extra caution when operating on slopes with rear-mounted grass catcher.

## WARNING

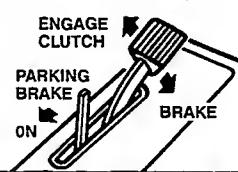
### AVOID SERIOUS INJURY OR DEATH

- READ OPERATOR'S MANUAL(S).
- KNOW LOCATION AND FUNCTION OF ALL CONTROLS.
- KEEP SAFETY DEVICES (GUARDS, SHIELDS, AND SWITCHES) IN PLACE AND WORKING.
- REMOVE OBJECTS THAT COULD BE THROWN BY THE BLADE.
- DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND.
- NEVER CARRY CHILDREN.
- LOOK DOWN AND BEHIND BEFORE AND WHILE BACKING.
- AVOID SUDDEN TURNS.
- IF YOU CANNOT BACK UP A HILL, DO NOT OPERATE ON IT.
- GO UP AND DOWN SLOPES, NOT ACROSS.
- IF MACHINE STOPS GOING UPHILL, STOP BLADE AND BACK DOWN SLOWLY.
- BE SURE BLADE(S) AND ENGINE ARE STOPPED BEFORE PLACING HANDS OR FEET NEAR BLADE(S).
- WHEN LEAVING MACHINE, SHUT OFF ENGINE, REMOVE KEY, AND SET PARKING BRAKE.

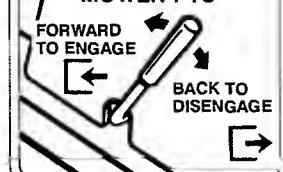
#### MOWER HEIGHT



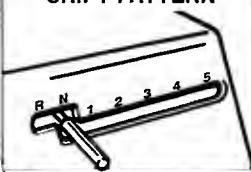
#### BRAKE & CLUTCH



#### MOWER PTO



#### SHIFT PATTERN



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**\*Read The Entire Manual Before Operating\***

## Safety Rules

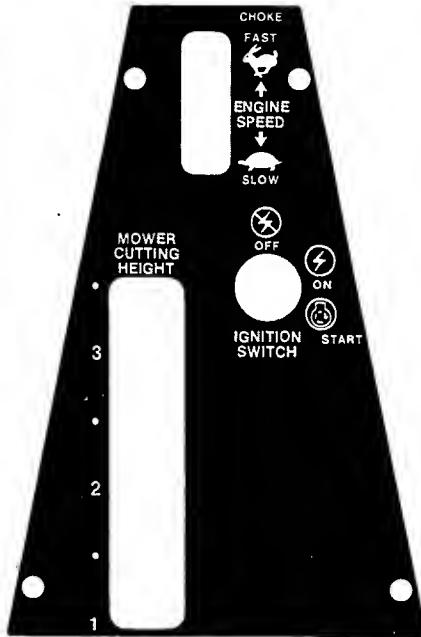
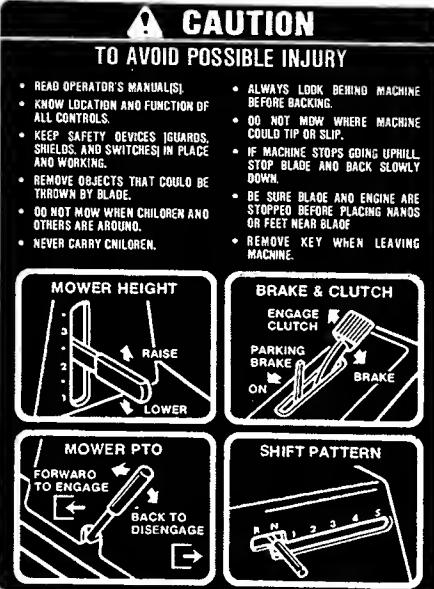
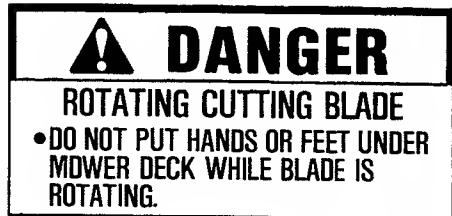


**Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to your yourself or bystanders, or damage to property or equipment. The triangle In the text signifies important cautions or warnings which must be followed.**

- Know the controls and how to stop quickly. READ THIS OPERATOR'S MANUAL and Instructions furnished with attachments.
- Do not allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers. Do not mow when children and others are around.
- Clear the work area of objects (wire, rocks, etc.) that might be picked up and thrown.
- Disengage all attachment clutches and shift into neutral before attempting to start the engine (motor).
- Disengage power to attachments and stop the engine (motor) before leaving the operator's position.
- Disengage power to attachments and stop the engine (motor) before making any repairs or adjustments.
- Disengage power to attachments when transporting or not in use.
- Take all possible precautions when leaving the vehicle unattended, such as disengaging the power-take-off, lowering the attachments, setting the parking brake, stopping the engine, and removing the key.
- Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.
- Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing direction on slopes.
- Stay alert for holes, rocks, and roots in the terrain and other hidden hazards. Keep away from drop-offs.
- Use care when pulling loads or using heavy equipment.
  - a. Use only approved drawbar hitch points.
  - b. Limit loads to those you can safely control.
  - c. Do not turn sharply. Use care when backing.
  - d. Use counterweights or wheel weights when suggested in this Operator's Manual.

- Watch out for traffic when crossing or near roadways.
- When using any attachments, never direct discharge of material toward bystanders or allow anyone near the vehicle while in operation.
- Handle gasoline with care — It is highly flammable.
  - a. Use approved gasoline container.
  - b. Never remove the fuel cap of, or add gasoline to, a running or hot engine or an engine that has not been allowed to cool for several minutes after running. Never fill the tank indoors and always clean up spilled gasoline.
  - c. Open doors if the engine is run in the garage — exhaust fumes are dangerous. Do not run the engine indoors.
- Keep the vehicle and attachments in good operating condition, and keep safety devices in place and in working condition.
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.
- To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
- The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.
- Do not change the engine governor settings or overspeed the engine.
- When using the vehicle with mower, proceed as follows:
  - a. Mow only in daylight or in good artificial light.
  - b. Never make a cutting height adjustment while the engine (motor) is running if the operator must dismount to do so.
  - c. Shut the engine (motor) off when removing the grass catcher or unclogging chute.
  - d. Check the blade mounting bolts for proper tightness at frequent intervals.
- Under normal usage, the grass catcher bag material is subject to deterioration and wear. Check bag frequently for deterioration and wear and replace worn bags. Check that replacement bags comply with the original manufacturer's recommendations or specifications.
- Disengage power to mower before backing up. Do not mow in reverse unless absolutely necessary and then only after observation of the entire area behind the mower.

## Decals

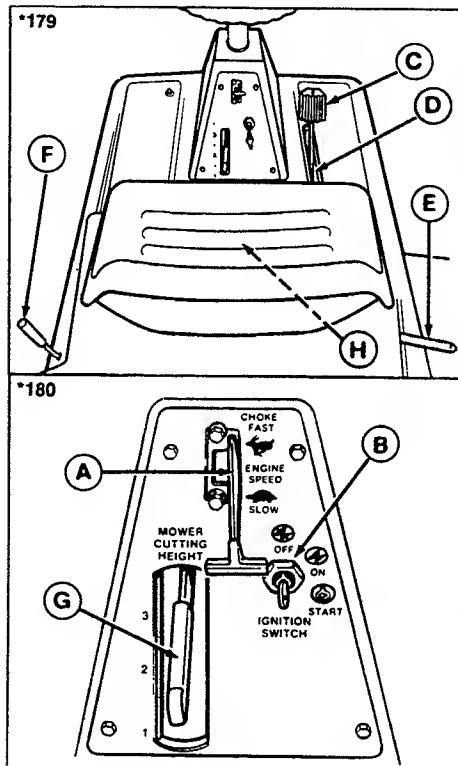


Mfg. No. 1690525 through 1690528 only.

**WARNING** ALLOW ENGINE TO COOL BEFORE REFUELING

# Operation

## EXPLANATION OF CONTROLS



ITEM	CONTROL	FUNCTION
A	Engine Speed Control Lever	Position Slow to Fast to control engine speed. Activates choke in full upward position.
B	Ignition Switch	Allows starting & stopping of engine.
C	Clutch-Brake Pedal	Press down to disengage drive and engage brake. Release pedal to engage traction drive.
D	Parking Brake Lever	To set parking brake, depress pedal and raise lever. Press pedal to release.
E	Gear Shift Lever	Use to shift to five forward and one reverse speeds.
F	PTO (Power Take Off) Control Lever	Move forward and down to engage mower. Pull up to disengage.
G	Mower Height Control Lever	To raise mower, move lever to the right while pulling up to desired height then move lever to the left to latch (6 positions).
H	Seat Switch	Automatically shuts the engine off when operator leaves the seat with the PTO engaged or with the transmission in gear.

Figure 1. Rider & Mower Controls

### **CHECKS BEFORE STARTING**

1. Check gasoline and add if necessary. See the engine manual for gasoline recommendations.
2. Check oil level and add if necessary (see engine manual).



#### **WARNING**

**Never add gasoline when engine is hot or running.**

3. Make sure either deflector or entire grass collector is in place.
4. Check for loose nuts, screws, bolts, oil leaks, gasoline leaks, etc.

### **SAFETY INTERLOCK SYSTEM**

Your rider is equipped with a seat switch safety system that will automatically shut the engine off when the operator leaves the seat with the PTO engaged or with the transmission lever in gear. The rider engine will continue to run when the operator leaves the seat if the PTO is disengaged and the transmission is in neutral.

Check the seat switch (A, figure 1A) every fall and spring with the following three tests. Make sure the wiring harness (B) is securely plugged into the switch.



#### **WARNING**

**If the rider does not pass the test do not operator rider. See your authorized dealer. Under no circumstance should you attempt to defeat the purpose of the safety system.**

#### **Test 1 — Engine should not crank if:**

- A. Seat not occupied, or;
- B. Transmission lever out of neutral, or;
- C. PTO engaged.

#### **Test 2 — Engine should crank if:**

- A. Seat is occupied, and;
- B. Transmission lever in neutral, and;
- C. PTO disengaged.

#### **Test 3 — Engine should shut off if:**

- A. Operator rises off seat with transmission in gear or;
- B. Operator rises off seat with PTO engaged.

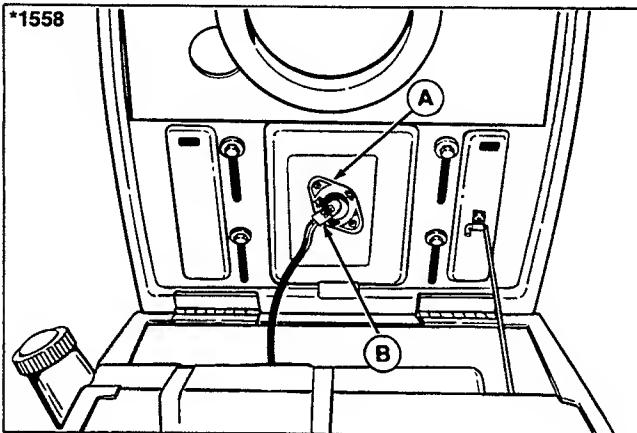


Figure 1A.

A. Seat Switch  
B. Wiring Harness

## STARTING & STOPPING

1. Make sure the parking brake is set, PTO lever is disengaged and gear shift lever is in neutral.
2. Select the desired cutting height using the mower height control lever. (To travel to work site, place in highest position.)
3. Place engine speed control lever in CHOKE position.

4. For manual start models, perform step "a". For electric start models, perform step "b".
  - a. Turn the key to START. Open the engine cover to latched position. Pull the recoil starter handle with a smooth, rapid stroke. When engine starts, move control lever from CHOKE to 1/3 to 1/2 speed.
  - b. Turn the key to START. When engine starts, release the key. Move control lever from CHOKE to 1/3 to 1/2 speed.
5. Release the parking brake by depressing the pedal. Keep the pedal depressed.
6. Make sure the path in desired direction of travel is clear of objects, people and animals.
7. Place gear shift lever in desired gear (see Selecting Gears & Engine Speed). If you are ready to mow, engage the PTO control lever with moderate speed. Engaging too gradually may cause belt wear.
8. **Slowly** release the clutch-brake pedal to engage traction drive. Adjust engine speed as desired. Between 3/4 and full speed is recommended.
9. **To stop**, depress the clutch-brake pedal. Depressing the pedal halfway will disengage the drive; depressing the pedal completely will engage the brake.

10. Before leaving operator's position, set the parking brake and disengage the PTO. Set the engine speed control to SLOW and allow the engine to idle for 20 seconds. Turn the key to OFF and remove it. Lower the attachment. Wait for moving parts to stop.
11. Clean all dirt and grass from the mower and rider. Be sure to clean the engine and transmission compartment. Allow engine to cool before touching engine parts.



### WARNING

Never operate on slopes greater than 30 percent (16.7°) which is a rise of three feet vertically in 10 feet horizontally.



### WARNING

Use front counterweight when operating with grass catcher on slopes over 15 percent (8.5°).



### WARNING

To reduce fire hazard, keep the engine, rider and mower free of grass, leaves and excess grease.



### WARNING

When operating on slopes between 15 and 30 percent, operate up and down the face of the slope, never across the face. Use slow ground speeds. Use caution when changing directions and DO NOT STOP OR START.

## SELECTING GEARS & ENGINE SPEED

Most mowing is done in second, third or fourth gear with engine speed between 3/4 and full speed. If the terrain is rough, hilly, or sloping use lower gear. If the grass is wet or over three inches (76 mm) high, use full engine speed (with lower gear) so the mower will have enough power to cut the grass. Use lower gears to mow around gardens, buildings, etc. Shift gears only with clutch-brake pedal depressed and rider completely stopped.



### CAUTION

During operation, shift gears only when clutch-brake pedal is depressed.

## MOWING PATTERN & TIPS

For the first use of the mower choose a smooth level area. Cut long straight strips overlapping slightly.

The size and type of area to be mowed determines the best mowing pattern to use. Obstructions such as trees, fences and buildings must also be considered. Where possible, make one or two passes in a clockwise direction around the outside of the area to keep cut grass off fences and walks. The remainder of the mowing should be done in a counterclockwise direction so the clippings are dispersed on the cut area.

Most lawns should be mowed to keep the grass approximately two to three inches (50 to 76 mm) high. Best

results are obtained by cutting often and not too short. To help keep a green lawn, never mow more than one third of the height of the grass, or a maximum of one inch (25 mm), in one mowing. For extremely tall grass, set the cutting height at maximum for the first pass, and then reset to the desired height and mow again.

On thick, or springy grass or soft ground, the mower rollers may sink into the ground giving too low a cut. Adjust the cutting height as necessary. For best appearance, grass should be cut in the afternoon or early evening (in daylight) when it is free of external moisture.

Where possible, change patterns occasionally to eliminate matting, graining or a corrugated appearance.

## **Normal Care**

### **STORAGE (30 Days or More)**

1. Run tractor engine until it stops from lack of fuel or use a gasoline stabilizer. This additive, available from your dealer, prevents formation of gum and varnish for up to one year.

#### **NOTE:**

Refer to Engine Manual for information on fuel shut-off valve.



#### **WARNING**

Never store rider where gasoline fumes may reach an open flame or sparks.

2. Change engine oil. Record the type and weight of oil put in crankcase.
3. Remove the spark plug. Squirt approximately one ounce (30 ml) of engine oil into engine through spark plug hole. Crank engine a few times to distribute oil and then reinstall the spark plug.
4. Lubricate the rider and mower.
5. Check battery fluid level. Battery life will be extended if it is removed and stored in a cool, dry place, fully charged.
6. Clean rider thoroughly. Coat all exposed bare metal parts with a good quality paint (obtainable from your dealer) or a light film of grease or oil.

## Normal Care

Safety Items	See Page	Before First **Use	Every Five Hours	Every 25 Hours	Every 50 Hours Or Yearly
Check safety interlock system.	6	•			•
Check tractor brakes.	15	•			•
<b>Normal Care Items</b>					
Check for loose hardware, oil leaks, etc.	—	•	•		
Lubricate rider & mower.	12				•
Check fluid level in battery.**	15	•	•		
Check tire pressures.	15	•			•
Change oil.*	Eng. Man.				•
Service air cleaner.	Eng. Man.				•
Check engine oil level.	Eng. Man.				•
Clean the cooling system.**	Eng. Man.	•	•		
Clean battery (elect. start models).	16				•
Service the blade.	16				•
Service spark plug.	Eng. Mn.				•
Check entire steering mechanism.	—	•			•
Check chain adjustment.	27	•			•

\*Change original engine oil after first 5 hours of operation.

\*\*More often in hot (over 85° F; 30 °C weather or dusty operating conditions.

## Normal Care Schedule

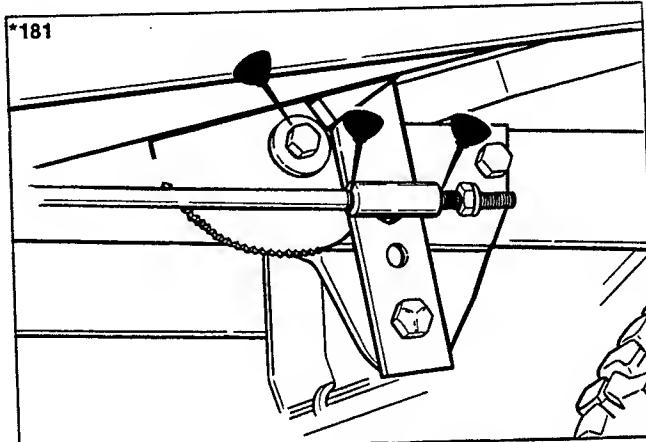
## *Normal Care*

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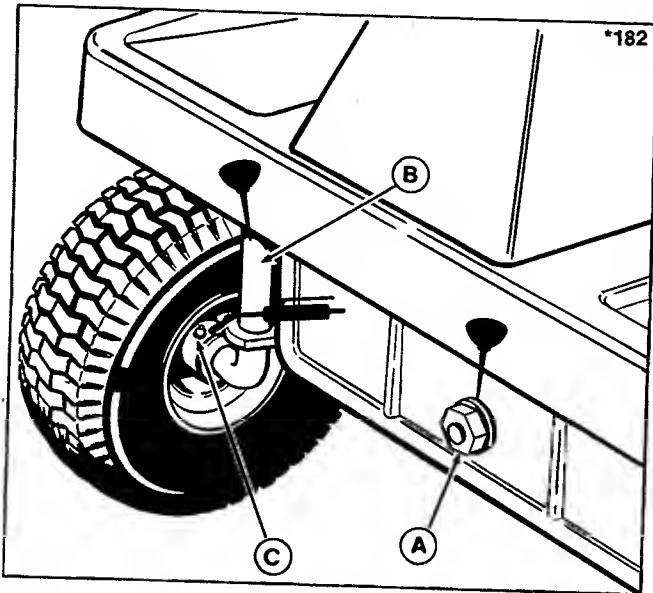
### **LUBRICATE THE RIDER**

Lubricate the rider as instructed in steps 1 thru 5. When an oil can is indicated, wipe off the area with a clean cloth, apply a few drops of medium weight (SAE 30) oil, and wipe up any spills. Keep lubricant off pulleys, belts and brake band.

1. Lubricate the points where the clutch-brake pedal and parking brake lever pivot and where clutch rod contacts rod guide. See figure 2.
2. With an oil can, lubricate the front spindles (one on each side) and mid pivot point (figure 3).
3. With a grease gun, apply one or two shots of lithium based automotive grease to the two grease fittings (one in each front wheel). See figure 3.
4. Lubricate the points where the gear shift linkage pivots on the transmission. Also lubricate points where PTO rod touches rod guide. See figure 4.
5. Oil the drive chain with a suitable, approved lubricant. Wipe off excess oil. Do not get oil on the brake band. If there is too much slack in the chain, see adjustment on page 27.

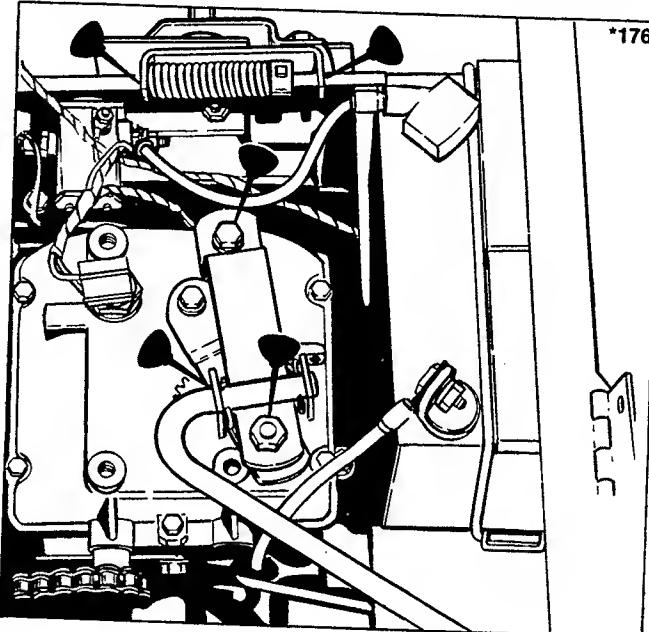


**Figure 2. Clutch-Brake Pedal Lubrication (under right-hand footrest)**



**Figure 3. Front Axle Lubrication**

- A. Mid Pivot Point
- B. Spindle
- C. Grease Fitting



**Figure 4. Transmission and PTO Rod Lubrication.**  
Shown without fuel tank for clarity.

## Normal Care

### LUBRICATE THE MOWER

Use an oil can to lubricate the pivot points shown in figure 5 or figure 6. Wipe off the area with a clean cloth, apply a few drops of medium weight (SAE 30) oil, and wipe up any spills.

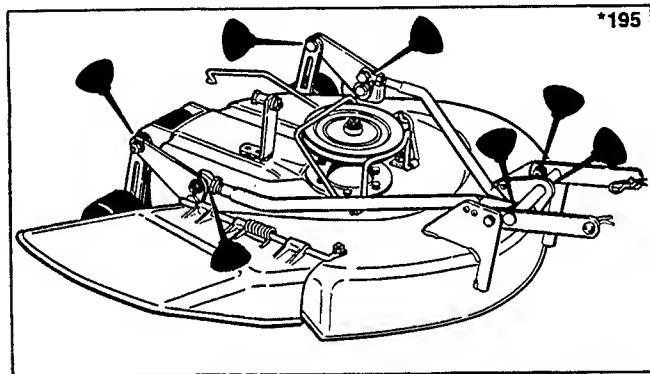


Figure 5. 26" & 30" Mower Lubrication Points

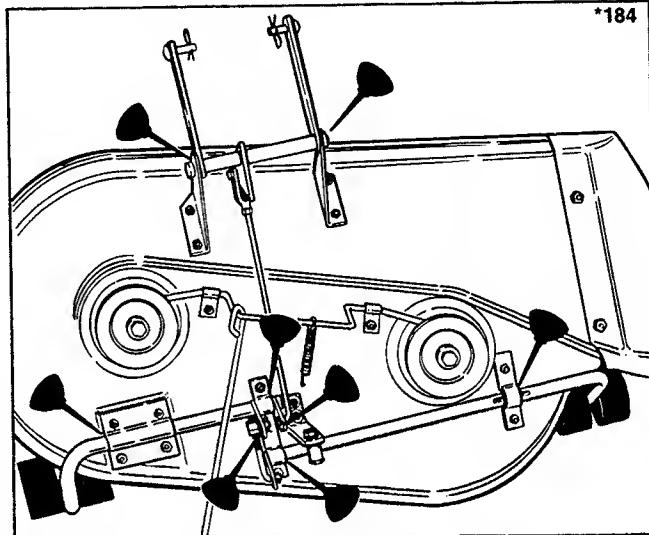


Figure 6. 36" Mower Lubrication Points

## CHECK TIRE PRESSURE

Make sure the air pressure in all four tires is 8 to 12 psi. Use a gauge with one-pound markings. Unequal or improper tire pressure can cause an uneven cut. (Some 5 HP models do not require air in front tires - semi-pneumatic.)

## CHECK TRACTOR BRAKES

From operator's position, test tractor brakes by driving tractor at slow speed and engaging clutch-brake foot pedal. Pedal has three positions:

1. Disengaged - Drive belt is fully engaged without any tractor brake.
2. Declutched - Drive belt is declutched but tractor brake is not applied yet.
3. Engaged - Drive belt is declutched and tractor brake is fully applied.

## BATTERY MAINTENANCE

### **WARNING**

For your personal safety when removing or installing battery cables, always disconnect the negative cable FIRST and reconnect it LAST. The positive battery terminal can easily be shorted to the tractor frame by a wrench or other tool if this is not done.

### **WARNING**

Be careful when handling the battery. Avoid spilling electrolyte. Keep flames and sparks away from the battery.

## Check Fluid Level

Check the battery fluid level (electric start models only). Wipe dirt from around the caps, then remove the caps one at a time. The fluid must be even with the bottom of the split ring. If not, add distilled water. Reinstall the caps. Be sure the cover is in place over positive terminal.

## Normal Care

### Cleaning Battery and Cables

1. Disconnect the cables from the battery, negative cable first. A positive "+" sign is stamped on the battery next to the positive terminal. See figure 7.

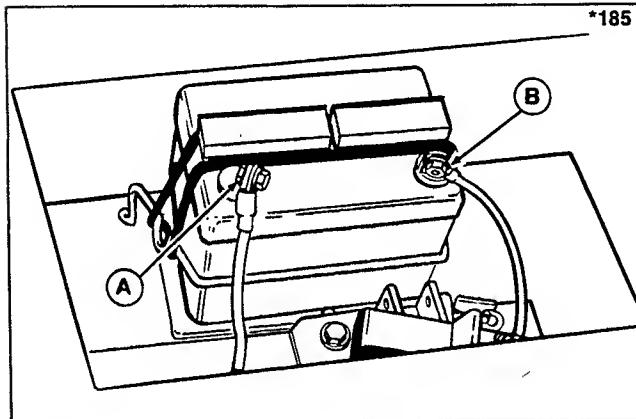


Figure 7. Battery. Shown without fuel tank for Clarity.

A. Positive Terminal (Cover not shown)

B. Negative Terminal

2. Slip the battery straps off then, remove the battery.
3. Clean the battery terminals and cable clamps with a wire brush.

4. Scrub the battery, cable and battery compartment with baking soda and water.
5. Reinstall battery and straps. The straps should be on each side of the terminals.
6. Connect cables, positive cable first.
7. Coat cable clamps and terminals with grease or petroleum jelly. Be sure to slide cover over positive terminal.
8. Make sure vent tube is installed on battery cap.

### BLADE SHARPENING/BALANCING

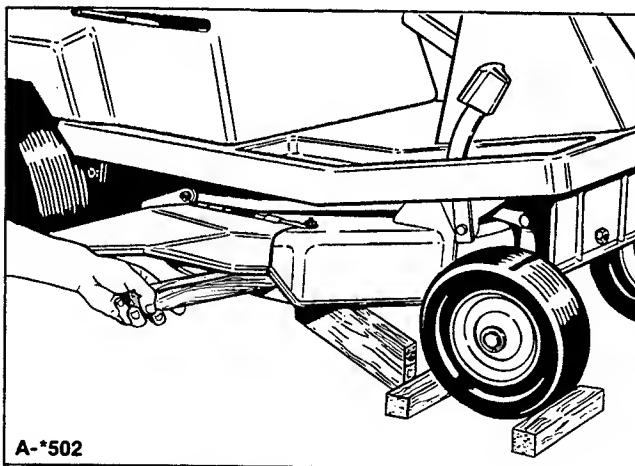
#### Blade Removal



**WARNING**  
Do not handle the blade with bare hands. Do not touch the cutting edge.

1. For the 36 inch mower only, remove the deflector by removing two bolts, lockwashers and nuts.
2. Place mower in highest cutting height.
3. Set the parking brake. Place wood blocks (2" x 4" or 4" x 4") under the front tires.

4. Place a wood block under the front edge of the mower. This will prevent the mower from falling in case the height control lever is accidentally knocked out of latched position.
5. To keep the blade from turning while removing the mounting capscrew, wedge a wood block between blade and housing. Insert the block thru the discharge opening and turn the blade counterclockwise until it presses against the block. See figure 8.



**Figure 8. Blade Removal**

6. Turn the blade mounting capscrew counterclockwise to loosen. Remove the capscrew, cup washer, spline washer and blade.
7. For the 36" mower only, block the blade on the left hand arbor and remove as described in step 6.

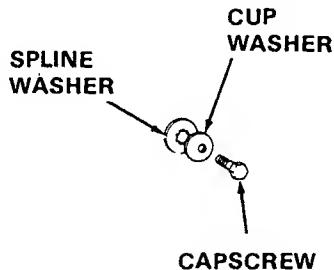
### **Sharpening & Balancing**

1. Use a file to sharpen blade to a fine edge. Remove all nicks and dents in blade edge. If blade is severely damaged it should be replaced.
2. To balance the blade, use a balancing machine or the following procedure. Drive a small nail into the side of a workbench or other vertical surface. Lubricate the nail with a drop of oil. Center the blade center hole on the nail. A balanced blade will remain level. File material off heavier end of blade until it is balanced.

### **Blade Installation**

1. Reinstall the blade(s) with the tabs pointing upward. Install the spline washer, cup washer, and capscrew (see figure 9). Be sure the splines on the spline washer are engaged with the shaft splines. Be sure cup washer is installed with the concave side up.

2. To tighten the capscrew, wedge a wood block between blade and housing to prevent blade from turning. Torque the capscrew to 50-70 ft. lbs. (67-95 Nm).
3. For the 36" mower, reinstall the deflector with the two carriage bolts, lockwashers and nuts. Install the carriage bolts from the bottom.



**Figure 9. Blade Hardware**

## Troubleshooting

### CONTENT OF SECTION

This section of the manual provides troubleshooting and repair instructions for the more common and easily corrected problems. For other problems, it is recommended that you contact your dealer.



#### WARNING

Perform maintenance on the tractor or mower only when the engine is stopped and the parking brake engaged. Always remove the ignition key before beginning the maintenance to prevent accidental starting of the engine.

**TRACTOR**

<b>Problem</b>	<b>Cause/Remedy</b>
<b>1. Engine will not start.</b>	
A. Gear shift lever not in neutral-start position. Shift into neutral.	
B. PTO clutch lever not disengaged. Disengage fully.	
C. Out of fuel. Allow engine to cool, then refill the fuel tank.	
D. Engine flooded. Move control out of CHOKE.	
E. Circuit breaker tripped. Wait one minute for automatic reset. Replace if defective. (See your dealer.)	
F. Battery terminals require cleaning. (See Normal Care Section.)	
G. Battery discharged or dead. Recharge or replace.	
H. Wiring loose or broken. Visually check wiring & replace broken or frayed wires. Tighten loose connections.	
I. Solenoid or starter motor faulty. Repair or replace.	
J. Safety interlock switch faulty. Replace if needed. (See your dealer.)	
K. Spark plug faulty, fouled or incorrectly gapped. Clean and gap or replace. (See engine manual.)	
L. Water in fuel. Drain fuel and refill with fresh fuel.	
M. Old stale gas. Drain fuel & replace with fresh fuel.	
<b>2. Engine starts hard or runs poorly.</b>	
A. Fuel mixture too rich. Clean air filter. Check choke adjustment. (See engine manual.)	
B. Carburetor adjusted incorrectly. (See engine manual.)	
C. Spark plug fouled or incorrectly gapped. Clean and gap or replace. (See engine manual.)	
<b>3. Engine knocks.</b>	
A. Low oil level. Check/add oil as required.	
B. Using wrong grade oil. (See engine manual.)	
<b>4. Excessive oil consumption.</b>	
A. Engine running too hot. Clean engine fins, blower screen and air cleaner.	
B. Using wrong weight oil. (See engine manual.)	
C. Too much oil in crankcase. Drain excessive oil.	
<b>5. Engine exhaust is black.</b>	
A. Dirty air filter. Clean air filter. (See engine manual.)	
B. Check choke adjustment. (See engine manual.)	

### **6. Engine runs, but rider will not drive.**

- A. Transmission not in gear. Shift into gear.
- B. Belt or chain is broken. Replace (page 41). Check chain adjustment (page 27).
- C. Drive belt slips. (See problem and cause below.)

---

### **7. Tractor drive belt slips.**

- A. Tractor clutch is out of adjustment. (See Clutch Adjustment, page 25.)
- B. Pulleys or belt greasy or oily. Clean as required.
- C. Belt stretched or worn. Replace with correct belt.
- D. Clutch rod binding in guide. Oil clutch rod.

---

### **8. Brake will not hold.**

- A. Brake is incorrectly adjusted. (See Brake Adjustment, page 25.)
- B. Brake band worn and requires replacement. (See your dealer.)
- C. Oil on brakes. Clean or replace brake band. (See your dealer.)

---

### **9. Rider steers hard.**

- A. Steering linkage is loose. Check and tighten any loose connections.

---

### **B. Improper tire inflation. Check and correct.**

(See page 15.)

### **C. Spindle bearings dry. Oil spindles. (See page 12.)**

---

### **10. Tractor drive belt does not stop when clutch-brake pedal is depressed.**

- A. Belt stops out of adjustment. (See Adjustment Section.)
- B. Tractor clutch out of adjustment. (See Clutch Adjustment, page 25.)

---

## MOWER

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### **1. Mower will not raise.**

- A. Lift rod not attached or damaged. Attach or repair.

---

### **2. Mower cut is uneven.**

- A. Mower not leveled properly. (See Mower Leveling, page 28.)
- B. Tires not inflated equally or properly. (See page 15.)

---

**3. Mower cut is rough looking.**

- A. Engine speed too slow. Set for three-fourths to full speed.
- B. Ground speed too fast. Use lower gear.
- C. Blades dull and require sharpening. (See Normal Care Section.)
- D. Mower drive belt slipping. Belt oily or worn. Clean or replace belt as necessary.
- E. Check PTO Clutch Adjustment. (See page 24.)

**4. Engine stalls easily with mower engaged.**

- A. Ground speed too fast. Use lower gear.
- B. Carburetor not adjusted properly.
- C. Cutting height set too low when mowing tall grass. Cut tall grass at maximum cutting height during first pass.
- D. Discharge chute jamming with cut grass. Cut grass with discharge pointing toward previously cut area.

**5. Excessive mower vibration.**

- A. Mower blades, arbors, or pulleys are bent. Check and replace as necessary.
- B. Mower blades are out of balance. Remove, sharpen and balance blades. (See Normal Care Section.)

**6. Excessive belt breakage.**

- A. Belt tension too tight. Readjust belt tension.
- B. Bent or rough pulleys. Repair or replace.
- C. Using incorrect belt. (See your dealer.)

**7. Mower drive belt slips or fails to drive.**

- A. Mower drive belt out of adjustment. (See PTO Clutch Adjustment, page 24.)
- B. Belt stops out of adjustment. Check. (See page 31.)
- C. Mower drive belt broken. Replace. (See page 40.)

### BATTERY REPLACEMENT

A battery too weak to start the engine may not need to be replaced. It may, as an example, mean that the charging system is not working properly or that the battery has lost its charge during storage. First check the fluid level and clean the battery (page 15). Have the battery recharged if necessary. If there is any doubt about the cause of the problem, see your dealer. If you must replace the battery, remove and install the battery as described in "Clean Battery and Cables".

### JUMP STARTING WITH AUXILIARY (BOOSTER) BATTERY

Jump starting is not recommended. First check the battery in "Battery Replacement" above. If jump starting must be done, follow these directions. Both booster and discharged batteries should be treated carefully when using jumper cable. Follow exactly the procedure outlined below, being careful not to cause sparks.

#### WARNING

Never expose battery to open flame or electric spark — battery action generates hydrogen gas which is flammable and explosive. Do not allow battery acid to contact skin, eyes, fabrics, or painted surfaces. Batteries contain a sulfuric acid solution which can cause serious personal injury or property damage.

#### NOTE:

The positive terminal has a cover. Slide cover away to perform this procedure. Slide cover back over positive terminal for normal operation.

1. Set parking brake and place transmission in "NEUTRAL".
2. Remove vent caps from both the booster and the discharged batteries. Lay a cloth over the open vent wells on each battery. These two actions help reduce the explosion hazard always present in either battery when connecting a "live" battery to a "dead" battery.

3. Attach one end on one jumper cable to the positive terminal of the booster battery (identified by a red color, "+" or "P" on the battery case, post or clamp) and the other end of same cable to positive terminal of discharged battery.  
**DO NOT** permit vehicles to touch each other, as this could establish a ground connection.
4. Attach one end of the remaining cable to the negative terminal (black color, "-" or "N") of the booster battery, and the other end to a bare metal surface on the frame of your rider AWAY FROM the battery compartment (do not connect directly to negative post of dead battery). Take care that clamps from one cable do not inadvertently touch the clamps on the other cable. Do not lean over the battery when making the connection.
5. The rider with the discharged battery should now start.

Reverse the jump starting procedure exactly to remove the jumper cables. Then reinstall the vent caps and throw the cloths away as they may have corrosive acid on them.



### WARNING

Any procedure other than the above could result in:  
(1) personal injury caused by electrolyte squirting out of the battery vents, (2) personal injury or property damage due to the battery explosion, (3) damage to the charging system of the booster vehicle or the other immobilized vehicle.

Do not attempt to jump start a vehicle having a frozen battery because the battery may rupture or explode. If a frozen battery is suspected, examine all fill vents of the battery. If ice can be seen or if the electrolyte fluid cannot be seen, do not attempt to start with jumper cables.

## Adjustments



### WARNING

Before performing any adjustment, set the parking brake, disengage the PTO, shut off the engine and remove the key.

## SEAT ADJUSTMENT

The seat can be moved forward or back for operator comfort. Loosen the four screws (A, figure 10) and move the seat to the desired position. Tighten the screws.

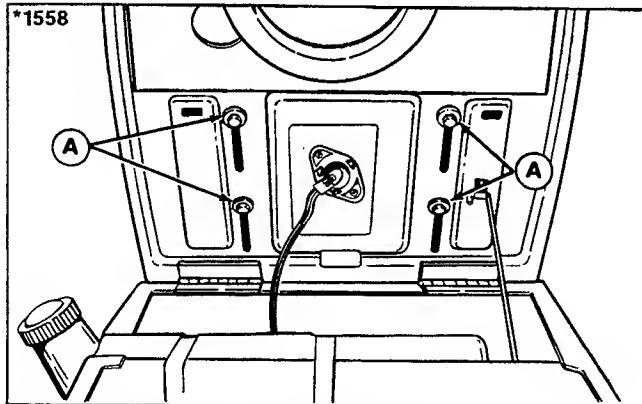


Figure 10. Seat Mounting Screws

A. Screws, Seat Hold Down

## PTO CLUTCH ADJUSTMENT

1. With the engine off, engage the PTO control lever.
2. Raise the seat deck. Measure the distance between the set collar (A, figure 11) and rod guide (B). The distance should be  $1/2$  inch (13 mm). If not, proceed to step 3.
3. Disengage the PTO. Loosen the setscrew (C) and change position of set collar on rod by pulling or pushing on rod. Tighten the setscrew.
4. Engage the PTO and recheck the measurement. If measurement is not correct, repeat step 3.

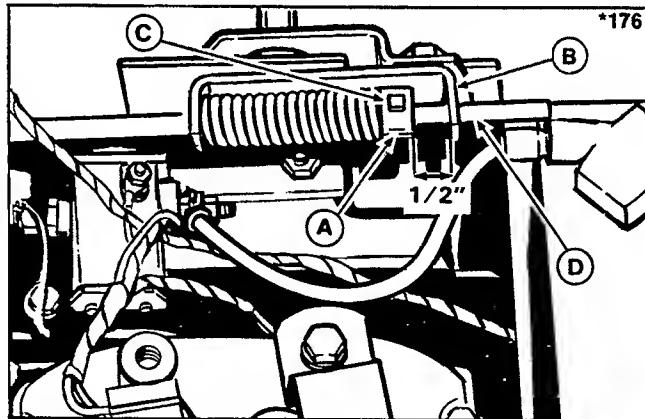


Figure 11. PTO Adjustment

A. Set Collar   B. Rod Guide   C. Setscrew   D. Rod

## CLUTCH-BRAKE ADJUSTMENT

### NOTE

Use this procedure for all Mfg. No. 1691106 and above. For Mfg. No. 1690525 thru 1690528, use this procedure if serial no. is equal to or higher than those listed below. For other models, see next page.

Mfg. No.	Serial No.
1690525	4537
1690526	2079
1690527	6912
1690528	2872

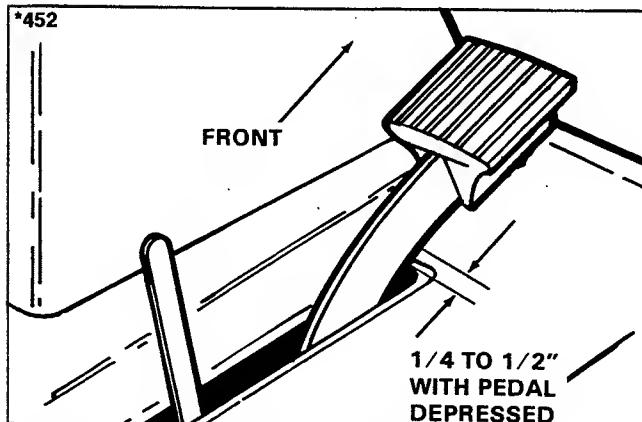


Figure 12. Clutch-Brake Adjustment

1. Press the pedal down as far as it will go (use normal braking force). There should be  $1/4$  inch to  $1/2$  inch clearance between the brake pedal and the front edge of the slot (see figure 12). If not, adjust the locknut (A, figure 13) by turning with a wrench. Move the locknut toward the rear to increase clearance or toward front to decrease clearance. Press the pedal down to recheck clearance. When correct, go on to step 2.

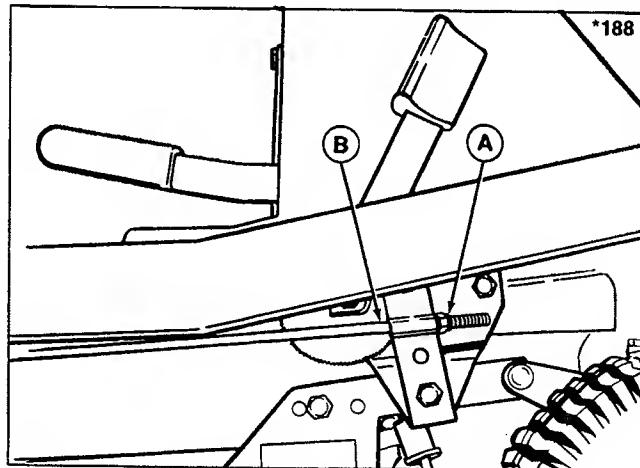


Figure 13. Clutch-Brake Adjustment

A. Locknut  
B. Clutch-Brake Rod

## Adjustments

- With the pedal released, measure the length of the spring (B, figure 14). It should be between 1 inch and 1-1/8 inch. If not, loosen the setscrew. Move the set collar to compress or release the spring to attain correct length. Tighten the setscrew and recheck the measurement.

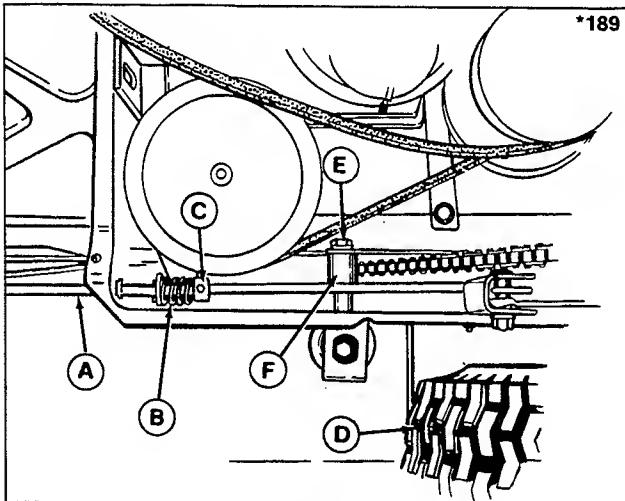


Figure 14. Clutch-Brake Adjustment (Viewed from underneath rider)

- A. Clutch-Brake Rod
- B. Spring
- C. Set Collar
- D. Right-Rear Tire
- E. Capscrew
- F. Spacer

## CLUTCH-BRAKE ADJUSTMENT - EARLY MODELS

### NOTE

Use this procedure for Mfg. No. 1690525 through 1690528, if serial no. is lower than those listed below. For other models, see previous page.

Mfg. No.	Serial No.
1690525	4537
1690526	2079
1690527	6912
1690528	2872

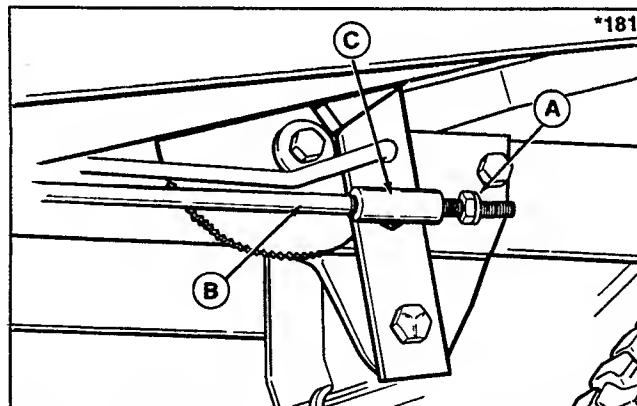


Figure 15. Brake Rod Adjustment

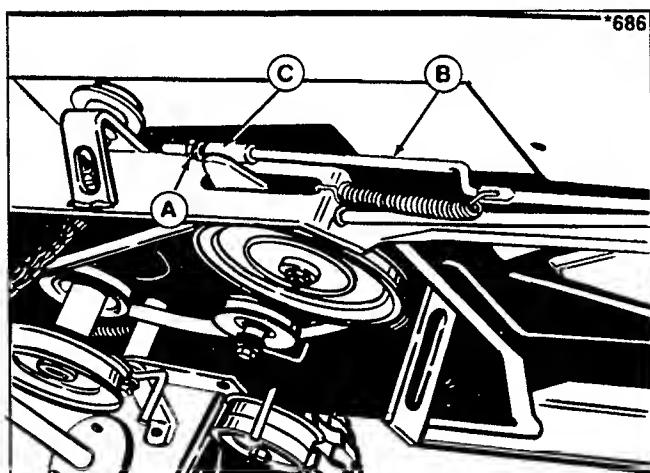
- A. Nut
- B. Brake Rod
- C. Rod Guide

- Release the parking brake. The pedal must be in up position.

#### NOTE

Before checking adjustment, apply brake firmly a few times to seat the brake band.

- Pull forward on the brake rod (B, figure 15) to take up any slack. Set the nut (A) on the brake rod so there is 1/2 to 5/8 inch (12.7 to 15.8 mm) clearance between nut and rod guide (C).



**Figure 16. Clutch Adjustment**

A.. Nut      B. Clutch Rod      C. Rod Guide

- Set the nut (A, figure 16) on the clutch rod (B) so there is 1/4 to 5/16 inch (6.3 to 7.9 mm) clearance between nut (A) and rod guide (C).

#### CHAIN ADJUSTMENT

If there is too much slack in the chain, it can be adjusted. Loosen the capscrew (E, figure 14) and nut which hold the spacer (F) in place. Move the spacer toward the chain to tighten. Tighten the capscrew and nut. **Do not adjust chain so it is tight.**

#### MOWER LEVELING



#### WARNING

During leveling check, remove ignition key, then remove spark plug wire and fasten it away from the spark plug.

#### NOTE

If the cut is uneven, the mower may need leveling. Unequal or improper tire pressure may also cause an uneven cut.

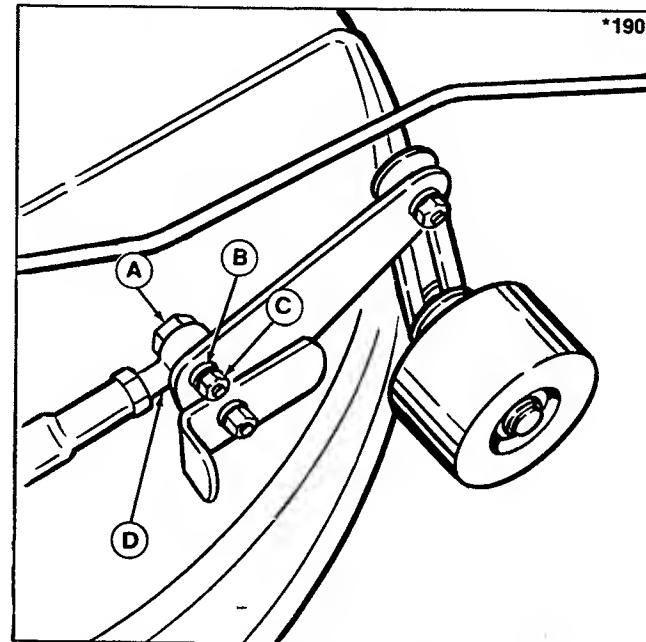
### Leveling the 26" & 30" Mowers

1. With the mower installed, place the rider on a smooth, level surface with mower in highest position. The front tires should point straight forward.
2. Disengage the PTO lever and turn the blade so it points side-to-side, perpendicular to the rider. Then engage the PTO.
3. Measure the distance from each outside tip of the blade to the ground. If there is more than 1/8 inch (3 mm) difference between the two measurements, proceed to step 4. If there is less than 1/8 inch difference, proceed to step 5.

#### NOTE

It will be easier to make adjustments with mower in lowest cutting position. To check measurements, reposition mower in highest cutting position.

4. Raise or lower one side until the mower is level. To do this, remove the bolt (A, figure 17), lockwasher (B) and nut (C) from one of the eyebolts (D). Turn the eyebolt in to lower that side or turn the eyebolt out to raise that side. (One full turn equals about 1/8 inch.) Install the bolt, lockwasher, and nut. Recheck the measurement taken in step 3.



**Figure 17. 26 & 30" Mower Leveling**

- A. Bolt
- B. Lockwasher
- C. Nut
- D. Eyebolt

5. Disengage the PTO lever. Turn the blade so it is front-to-back, parallel with the rider. Engage the PTO lever.
6. Measure the distance to the ground from the front tip of the blade and from the rear tip of the blade. If there is more than 1/8 inch (3 mm) difference between the two measurements, proceed to step 7. If there is less than 1/8 inch difference, the mower is level.
7. Remove the bolt, lockwasher, and nut from one of the eyebolts (figure 17). Turn the eyebolt out to raise the rear of the mower or turn eyebolt in to lower rear of mower. Remember exactly how much eyebolt was turned and reinstall the hardware. Remove the bolt, lockwasher and nut from eyebolt on the other side of the mower and **turn eyebolt same number of turns**. Reinstall the hardware. Recheck the measurement taken in step 6.

#### **Leveling the 36" Mower**

1. With the mower installed, place the rider on a smooth, level surface, such as a concrete floor. Using height control lever, place mower in highest position.
2. Disengage the PTO lever. Arrange the blades so they point side-to-side, perpendicular to the rider. Engage the PTO.

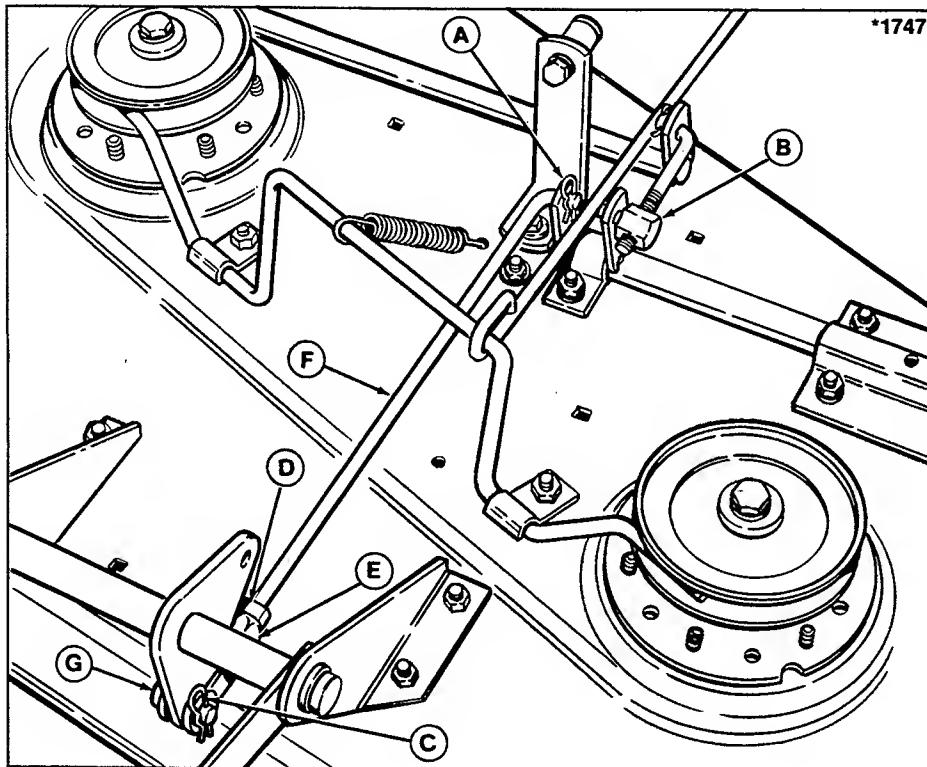
3. Measure the distance between the outside tips of each blade and the ground. If there is more than 1/8 inch (3 mm) difference between the two measurements, proceed to step 4. If not, proceed to step 5.

#### **NOTE**

It will be easier to make adjustments with mower in lowest cutting position. To recheck measurement, reposition mower in highest cutting position.

4. Remove the clip (A, figure 18) which secures the pivot (B). Pull pivot (B) out of hole. To raise the right side of the mower, turn the pivot counterclockwise, so pivot moves toward front. To lower the right side of the mower, turn the pivot (B) clockwise, so pivot moves toward rear. Put the pivot back in the hole and recheck the measurement. If mower is level, install the clip (A). If not, readjust the rod.
5. Disengage the PTO and turn the blades so they point front-to-back, parallel with rider. Engage the PTO.
6. Measure the distance to the ground from the front tip of the left blade and from the rear tip of the right blade. If there is more than 1/8 inch (3 mm) difference, proceed to step 7.

## Adjustments



**Figure 18. 36" Mower Leveling**

- A. Hairpin Clip
- B. Pivot
- C. Hairpin Clip
- D. Jam Nut
- E. Clevis
- F. Rod
- G. Pin

7. Remove the clip (C, figure 18) from the clevis (E). Loosen the jam nut (D) from the clevis (E). Pull the pin (G) out of the clevis. Turn the clevis clockwise to lower the rear of the mower. Turn the clevis counterclockwise to raise the rear of the mower. Reattach clevis with pin and recheck the measurement. If measurement is correct, tighten nut (D) against clevis, and reinstall rod and clip (C).

## BELT STOP ADJUSTMENTS

### 36" Mowers

1. Adjust the belt stop on the left mower pulley so there is  $1/8$  inch (3 mm) clearance between belt stop and belt when PTO is engaged. (See figure 19).
2. Refer to figure 20. Adjust the idler pulley belt stop (F) so it is at a  $90^\circ$  angle to the idler arm (G).
3. Adjust the belt guard (E) so there is  $1/8"$  (3 mm) clearance between guard and lower pulley. To move belt guard, loosen its two mounting capscrews and slide guard rearward or forward.

### 26" & 30" Mowers

1. Refer to figure 20. Adjust the mower drive belt stop (L) so it is parallel with the rider.
2. Adjust the traction drive idler pulley belt stop (F) so it is at a  $90^\circ$  angle to the idler arm (G).
3. Adjust the belt guard (E) so there is  $1/8"$  (3 mm) clearance, between guard and lower pulley. To move belt guard, loosen its two mounting capscrews and slide guard rearward or forward.

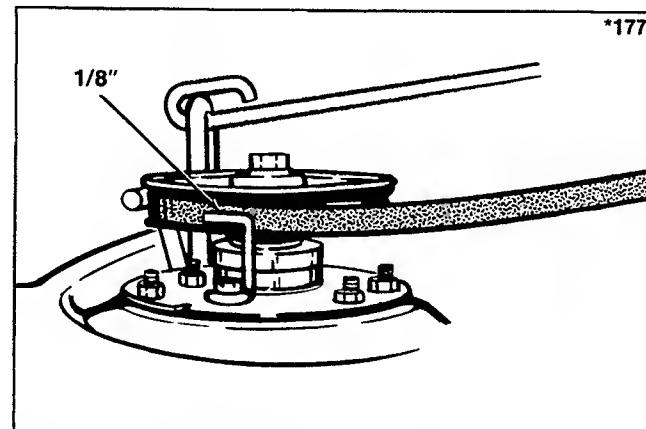
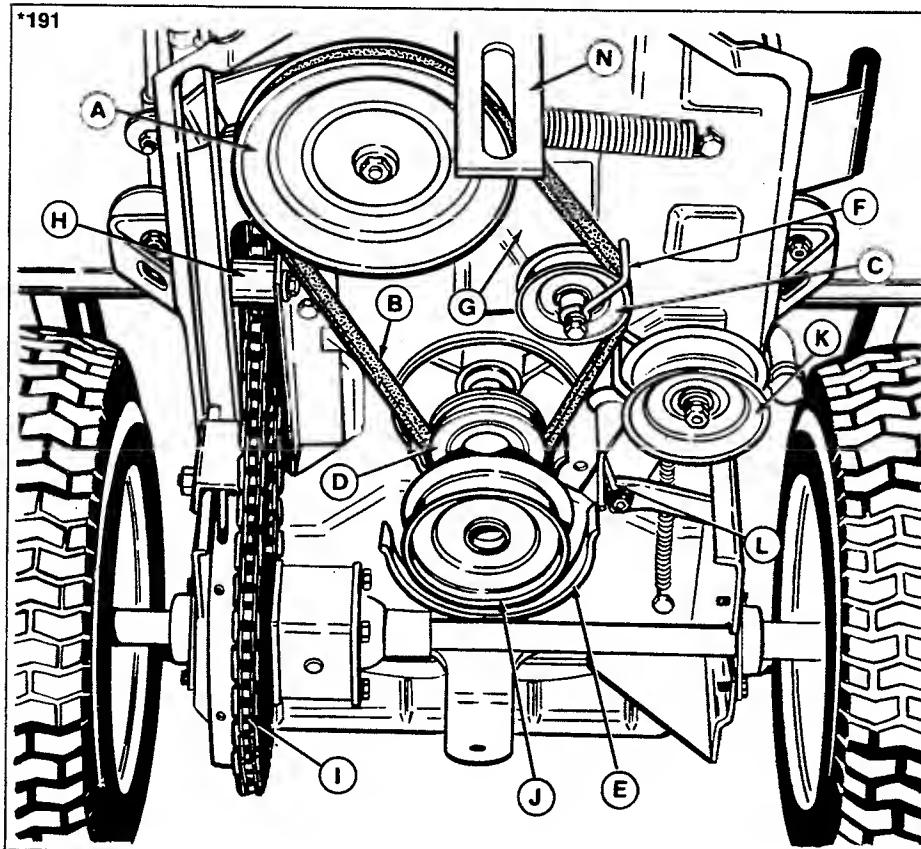


Figure 19. Left Mower Pulley Belt Stop



**Figure 20. Rider & Mower Drive**

- A. Transmission Pulley
- B. Traction Drive Belt
- C. Traction Drive Idler Pulley
- D. Engine Pulley
- E. Engine Pulley Belt Guard
- F. Idler Pulley Belt Stop
- G. Idler Arm
- H. Spacer, Chain Tension
- I. Chain, Traction Drive
- J. PTO Pulley
- K. Mower Belt Idler Pulley
- L. Mower Drive Belt Stop  
(26" & 30" Mowers only)
- M. Idler Pulley Belt Stop
- N. Upstop Bracket

# Mower Installation & Removal

## MOWER INSTALLATION — 36" MOWER

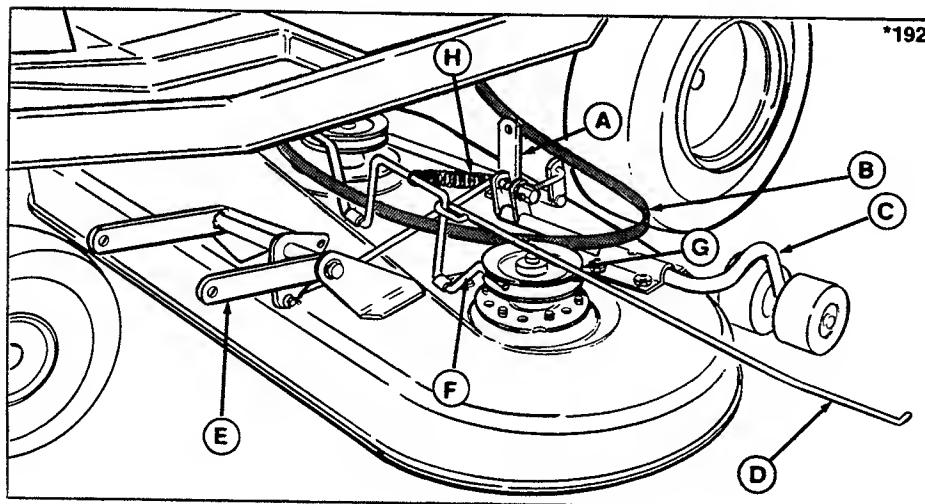
### WARNING

Place mower on a level surface. Place transmission in NEUTRAL and set the parking brake. Turn key to OFF and remove it.

### NOTE

This procedure assumes the belt is installed on the engine PTO pulley (J, figure 20) and idler pulley (K).

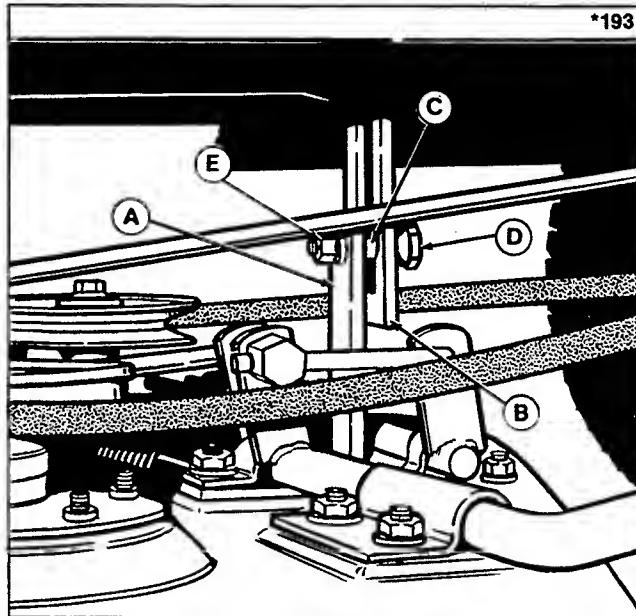
1. Place mower on left side of rider with mower brake rod (D, figure 21) pointing left. Slide mower partially under and place belt over mower bracket (A).



**Figure 21. Installing 36" Mower**

- A. Mower Bracket
- B. Belt
- C. Roller Arm
- D. Brake Rod
- E. Mower Hitch
- F. Mower Brake
- G. Belt Stop, Left Mower Pulley
- H. Brake Spring

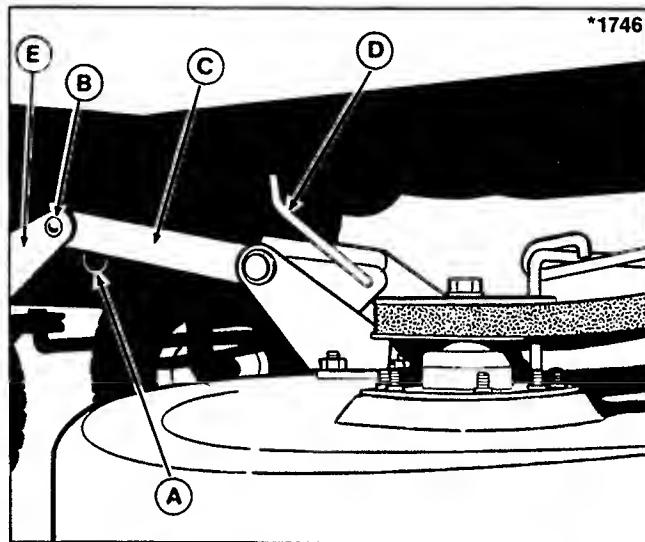
2. With mower as far toward rear of rider as possible (rollers just clear tires) push mower under rider until hitch touches steering mechanism. To slide mower farther, push down on both the hitch and the roller arm (C). Slide mower until the hitch arms are on either side of the steering mechanism.
3. Slide the mower back toward the left and forward to align mower bracket (A, figure 22) in front of upstop bracket (B). (If drag link interferes with hitch, push hitch up for clearance.)
4. Before installing mower, remove one end of brake spring (H, figure 21) and route loose belt under spring and brake rod (D). Reinstall spring.
5. To align the mower hitch in rider hitch ears, push the hitch arms up and insert between ears (figure 23). (Pulling up on roller arm will help raise hitch.) Secure the mower hitch with pins and spring clips. Install pins from the outside. Be sure to install clip fully onto large ring.
6. Apply a little grease to the inside of the spacer (C, figure 22) and place the spacer on the bolt (D). Install the bolt thru the upstop bracket and mower bracket from the rear. Install the locknut (E) and tighten securely. The spacer (C) must ride inside the upstop bracket (B).



**Figure 22. Mower Upstop Bracket - 36" Mower**

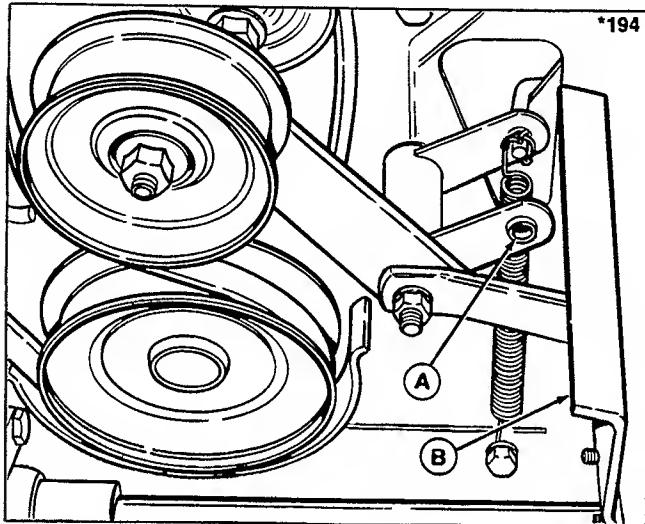
- A. Mower Bracket
- B. Upstop Bracket
- C. Spacer
- D. Bolt
- E. Locknut

7. Install the belt on the pulleys. Push the mower brake (F, figure 21) away from the pulleys to install belt. Loosen left arbor pulley belt stop if necessary. Make sure "V" side of belt rides in pulleys and there are no twists in belt.
8. Push the brake (F, figure 21) away from the pulleys so the brake rod (D) will clear the tire and left side plate. Insert the brake rod just inside the left side plate and insert the end of rod into PTO linkage shown in figure 24. (Engage the PTO lever to change position of the linkage.) Secure the brake rod with a spring clip (insert spring clip from rear).
9. Put height control lever in lowest position. To slip the lift rod (D, figure 23) into the hitch flange, the front of the mower must be raised a little. One method is to insert a wooden handle under the front of the mower deck and lift slightly (in a lever action). Insert end of lift rod into the hitch flange. Secure the rod with a washer and cotter pin.
10. With the PTO lever engaged, the distance between the belt stop and the belt on the left mower pulley should be  $1/8$  inch.



**Figure 23. Mower Hitch**

- A. Spring Clip
- B. Pin
- C. Mower Hitch Arm
- D. Lift Rod
- E. Rider Hitch Ear



**Figure 24. PTO Linkage**

- A. Insert Brake Rod
- B. Left Side Plate

### MOWER REMOVAL - 36" MOWER

1. Remove the spring clip from the brake rod and remove end of rod from the PTO linkage (figure 24). Push brake rod forward to clear left side plate and tire and swing rod out toward left side.
2. Push the brake away from the pulleys to slip belt out. If necessary, loosen the belt stop on the left hand pulley.
3. Remove the two pins and spring clips from mower hitch.
4. Remove bolt, spacer, and locknut from upstop bracket.



**WARNING**  
**Mower will be free to fall after completing the next step.**

5. Remove the spring clip and washer from the lift rod. Pull the lift rod from the hole.
6. Slide the mower partially out and slip the belt over the mower bracket. To slide mower out, either lower hitch to clear steering mechanism or raise front of rider slightly.

## MOWER INSTALLATION — 26" & 30" MOWER



### WARNING

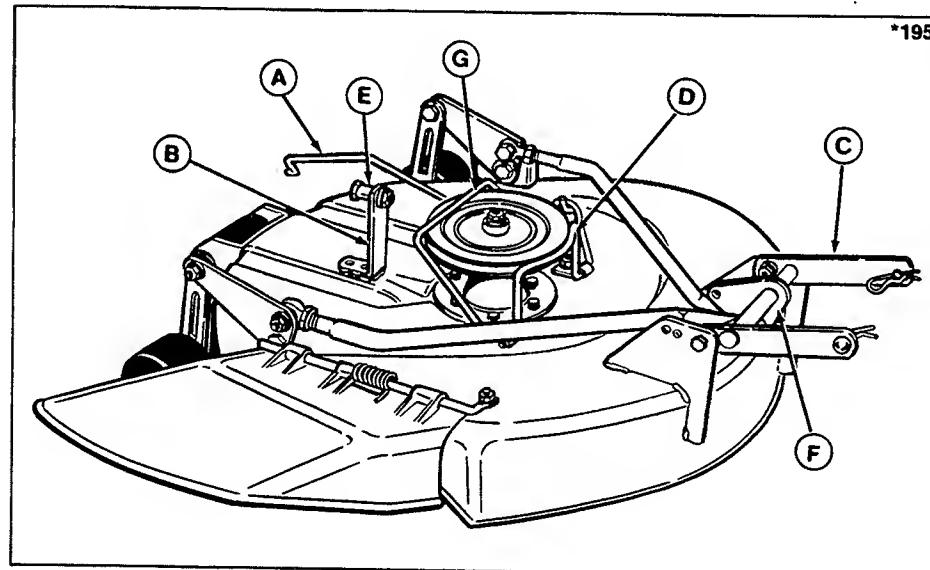
Place transmission in NEUTRAL and set parking brake. Turn key to OFF and remove it.

### NOTE

This procedure assumes the mower drive belt is already installed on the PTO pulley (J, figure 20) and idler pulley (K).

### NOTE

Loosen the hardware which secures the pulley belt guard (G, figure 25). The guard must be loose to install the belt.



**Figure 25. 26 " & 30" Mower**

- A. Brake Rod
- B. Mower Bracket
- C. Hitch
- D. Brake
- E. Spacer
- F. Mower Flange (insert lift rod in hole)
- G. Pulley Belt Guard

1. Place the rider on a level surface and set the parking brake. Place wood blocks (2" x 4") under the front tires. (Place wider side [4" side] of block down for better stability.) Turn the tires for a full right turn.
2. Place the mower on the left side of the rider with hitch pointing forward. Then grasp the hitch and rotate the mower counterclockwise 45°.
3. Push the mower under the rider, rear end first, until rear (center) roller is just in front of the right rear tire.
4. Slide the hitch toward the front until it touches the steering gear. Push down on the hitch and slide hitch farther so hitch arms are on either side of the steering gear.
5. Go around to the right side of the rider. Push the mower forward so rear roller will clear the tire then push mower under rider. Slip the belt over the mower bracket (B, figure 23).
6. Position the mower under the rider so that the mower bracket (B) is behind the rider upstop bracket.
7. Push the brake (D, figure 25) away from the pulley and slip the belt into the pulley. Be sure there are no twists in the belt. Tighten the belt guard (G, figure 25) hardware securely.
8. Lift up the front of the mower to align the hitch arms between the rider hitch ears (figure 23). Insert the two pins while holding mower up. Install the two spring clips in the pins.
9. Lift up the front of the mower and insert the lift rod (D, figure 23) into the hitch flange. One method to lift mower is to insert a wooden handle under the front edge of the mower deck and lift slightly (in a lever action). Place washer on lift rod then install spring clip.
10. Apply a little grease to the inside of the spacer (E, figure 25) and place the spacer on the bolt. Install the bolt thru the upstop bracket and mower bracket from the front. Be sure spacer is inside the upstop bracket. Install the locknut on the bolt. Tighten securely.
11. Push the brake (D, figure 25) away from the pulley to insert the brake rod (A) just inside the left side plate. Insert the rod into the PTO linkage shown in figure 24.
24. Insert the spring clip into the rod from the rear.

## MOWER REMOVAL — 26" & 30" MOWER



### WARNING

Place transmission in NEUTRAL and set parking brake. Turn key to OFF and remove it.

1. Place rider on a level surface. Place mower in lowest cutting height.
2. Make sure the parking brake is set. Place blocks of wood (2" x 4") under the front tires. (Place wider side of block down for better stability.)
3. Remove the bolt, spacer, locknut from the mower bracket (A, figure 22).
4. Remove the two pins and spring clips from the hitch.
5. Loosen the hardware that secures the mower pulley belt guide (G, figure 25). Push the brake (D) away from the pulley and slip the belt out. Push the mower to one side and slip belt between mower bracket (B) and upstop bracket.
6. Remove the spring clip from the rear of the brake rod (A) and pull rod out of the linkage.
7. Remove the spring clip from the lift rod (D, figure 23). Remove the washer.



### WARNING

After completing the next step, the mower will be free to fall.

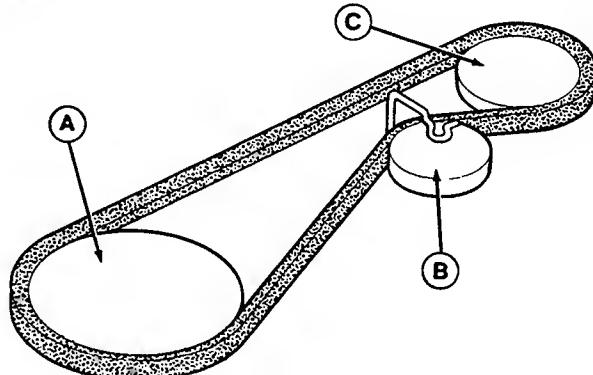
8. The mower must be lifted slightly to remove the lift rod from the mower flange (F, figure 25). One way is to insert a wood handle under edge of mower and lift up in a lever action. Pull lift rod out of the hole.
9. Slide rear of mower toward right rear tire until rear (center) roller touches the tire.
10. Go around to the right side. Push mower forward so rear (center) roller will clear the right rear tire and pull rear of mower outward until rear roller extends out the right side.
11. Go around to the left side. Turn the tires for full right turn. Grasp the hitch and slide the front of the mower toward the left. Push down on the hitch to slide the right hitch arm under the steering gear.
12. Pull the mower out the left side, hitch first.

# Belt Replacement

## MOWER DRIVE BELT REPLACEMENT

1. Place mower in lowest cutting height.
2. Remove the bolt, spacer, lockwasher and nut from the mower bracket (A, figure 22).
3. Loosen the capscrews which secure the belt guard (E, figure 20) and slide the guard back.
4. Loosen the idler pulley (K) mounting hardware. If pulley is removed, remember the position of the washers and belt stop (M).
5. On the 36 inch mower, loosen the left arbor pulley belt stop. On 26 inch or 30 inch mower, loosen the belt guide (G, figure 25).
6. Remove the two pins and clips that secure the hitch.
7. Remove the belt. Push brake away to slip belt off pulleys. Slide the mower to one side to slip belt between mower bracket and upstop bracket (B, figure 22).
8. Install the new belt and reverse the removal procedure. The belt pattern is shown in figure 26 or 27. Check belt stop adjustments.
9. Check PTO clutch.

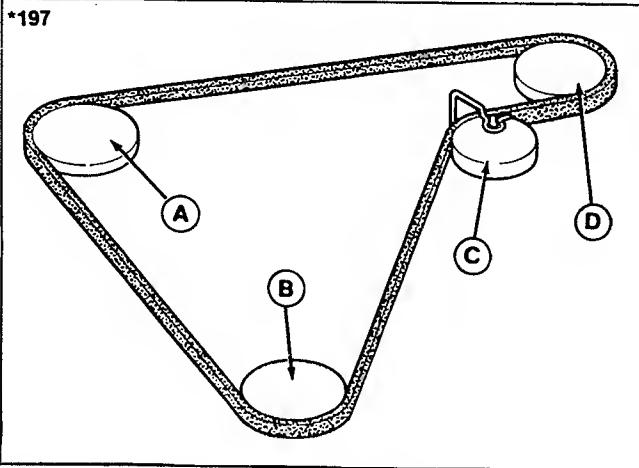
\*196



**Figure 26. Belt Pattern - 26" & 30" Mowers**

- A. Mower Pulley
- B. Flat Idler Pulley
- C. Engine PTO Pulley

\*197



**Figure 27. Belt Pattern - 36" Mower**

- A. Right Arbor Pulley
- B. Left Arbor Pulley
- C. Flat Idler Pulley
- D. Engine PTO Pulley

### RIDER DRIVE BELT REPLACEMENT

1. Loosen the nut that secures the idler pulley belt stop (F, figure 20).
2. Loosen the two capscrews that secure the engine pulley belt guard (E) and slide the belt guard toward rear of rider.
3. Slip the mower drive belt off the PTO pulley (J).
4. Remove the drive belt (B) from the transmission pulley (A) and idler pulley (C). Pull the belt down off the engine pulley and remove from rider.
5. Install the new belt in reverse order of removal. Adjust the belt stop (F) so it is at a 90° angle to the idler arm (G). Adjust the belt guard (E) so there is 1/8 inch clearance between guard and pulley.

## Specifications

### ENGINE

**Make:** Briggs & Stratton, single cylinder, 4 cycle, air cooled

**Horsepower:** **8 HP:** @ 3600 RPM

**10 HP:** @ 3600 RPM

**Engine Model:** **8 HP:** 190707 (Standard)

193707 (I/C)

**10 HP:** 220707 (Standard)

255707 (Balanced)

256707 (I/C)

**Crankshaft:** Vertical, unbalanced

190707, 220707

Vertical, synchro-balanced

193707, 255707, 256707

**Displacement:** **8 HP:** 19.44 cu. in. (318.5 cc)

**10 HP:** 22.04 cu. in. (361.2 cc)

**Bore & Stroke:** **8 HP:** 3 x 2.75"

**10 HP:** 3.44 x 2.38"

**Ignition:** High tension magneto

**Governor:** Mechanical flyweight

**Choke:** Controlled by engine speed control lever

**Starter:** 12 volt gear drive

**Alternator:** 3 amp d.c. unregulated

**Air Cleaner:** Oil foam type, reusable element

**Fuel Capacity:** 7 quarts

**Crankcase Capacity:** **8 HP:** 2.25 pints

**10 HP:** 3 pints

### TRANSMISSION

8 & 10 HP Ground Speed @ 3400 RPM

<b>Gear</b>	<b>MPH</b>
First	1.3
Second	2.0
Third	3.1
Fourth	3.8
Fifth	4.5
Reverse	1.5

**Brake:** 7" band type on rear axle

**DIMENSIONS**

**Front Tires:** 4.10/3.50 - 4 Pneumatic

**Rear Tires:** 16 x 6.50-8 Pneumatic

**TUNE UP SPECIFICATIONS**

<b>Spark Plug Type</b>	<b>Champion</b>	<b>Autolite</b>	<b>Robert Bosch</b>
Short Plug	CJ-8	235	WS9E
Long Plug	J-8	295	—
Resistor Short Plug	RCJ-8	245	WSR9E
Resistor Long Plug	RJ-8	306	—
Spark Plug Gap	.....	.030" (.76 mm)	
Ignition Point Gap	.....	.020" (.51 mm)	



**WARNING**

For electrical safety always remove cable from negative (-) side of the battery before attempting any repairs or maintenance.

**NOTE:** Also see engine manual.

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.**

## Common Replacement Parts

Listed below are part numbers for the more common replacement parts. Use the order form on page 47 to order a complete, illustrated parts manual. Only genuine Deutz-Allis Lawn & Garden replacement parts will assure optimum performance and safety. Do not attempt repairs or maintenance unless proper procedures and safety precautions are followed. For assistance in any area, see your dealer.

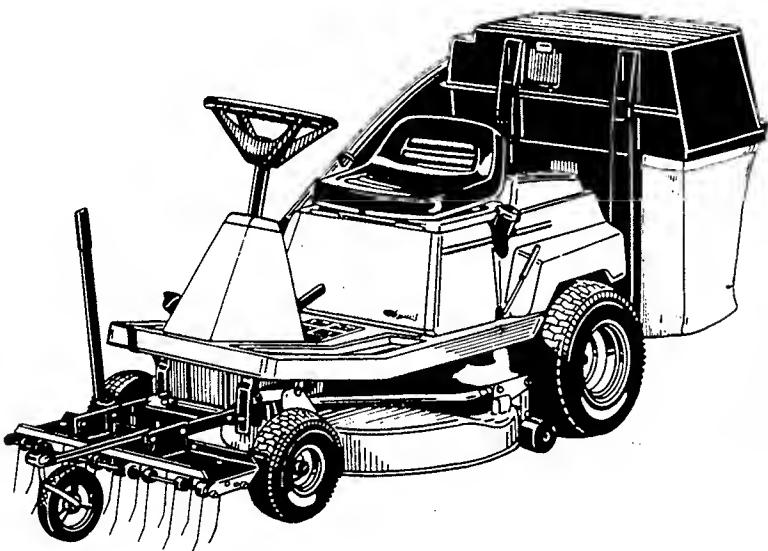
Qty.	Per	Item	Description	Part Number
1		Drive Belt - engine to transmission		1665706
1		Drive Belt - 26" mower		1664946
1		Drive Belt - 30" mower		1665024
1		Drive Belt - 36" mower		108505
1		Keys - ignition (2 keys with ring)		122203
1		Blade - 26" mower		1664917
1		Blade - 30" mower		1664019
2		Blade - 36" mower		1657589
1		Blade - 36" mower w/grass catcher (used on discharge side)		1667446
1		Lifts for Blade - 26" & 30" mower with grass catcher (used on discharge side)		1665419

1	Hairpin Clip - mower lift rod	106787
1	Washer, 3/8" - mower lift rod	917378
2	Hairpin Clip - leveling clevis & pivot (36" mower)	106787
2	Hitch Pin - mower Seat Switch (if equipped)	156306
1	Strip	1671703
1	Button	1700636
1	PTO Switch	1665586
1	Transmission Switch	1654634
2	Hairpin Clip - for hitch pin	106787
1	Battery	1685215
1	Hairpin Clip - brake rod	106787

**Extend Equipment Life-  
Use Only Genuine Deutz-Allis  
Lawn & Garden Equipment  
Repair Parts**

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## **Optional Attachments & Accessories**



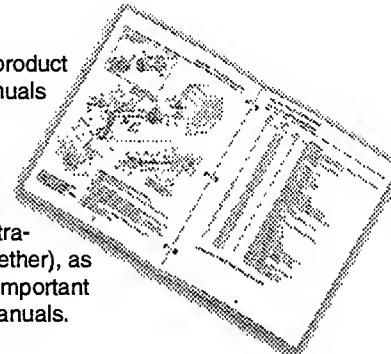
**6.5 Bu. Dump Cart  
Deluxe Twin Catcher  
Dethatcher  
Hubcaps**

## Additional Technical Literature Available



### **Operators Manuals**

Additional copies of this manual are available, (and as part of our product support commitment, we maintain a stock of printed operators manuals going back over 25 years!)



### **Parts Manuals**

Fully illustrated parts manuals are also available — these manuals show all of the product's components in exploded views ("3D" illustrations which show the relationship of the parts and how they go together), as well as giving the replacement part numbers and quantities used. Important assembly notes and special torque values are included in these manuals.

### **Repair & Service Manuals**

In addition, for many models, we have in-depth repair & Service Manuals available, which take you step-by-step through maintenance, tear-down, component replacement and re-assembly procedures.



*For the available manuals applicable for your model, contact the Customer Publications Department at 414-284-8519. Have the information listed in the box at the right available when phoning in your request.*

<b>Model:</b>	<input type="text"/>
<b>Mfg. No.:</b>	<input type="text"/>
<b>Your Name:</b>	<input type="text"/>
<b>Address:</b>	<input type="text"/>
<b>City, State, Zip:</b>	<input type="text"/>
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